PORTABLE CELLULAR TELEPHONE USER MANUAL

MOTOROLA

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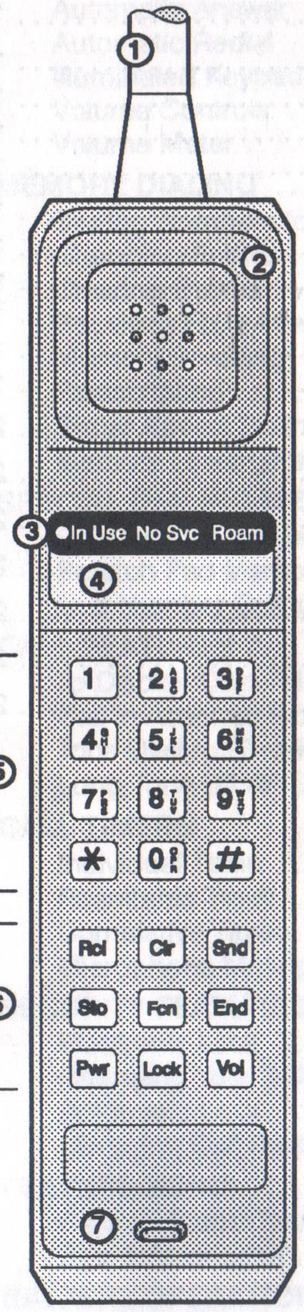
INTRODUCTION

To help you become familiar with the features of your Motorola portable telephone, we suggest that you experiment with them as you progress through this manual. If you should press an unintended choice, simply press the End key and the Clr key, and begin again.

Please read the safety information on page 20 before operating the unit.



① **Antenna**

② **Earpiece**

③ **Status Indicators** — These flash or light steadily during use to indicate a number of conditions:

On/Lock (Green) — Flashes slowly to indicate unit is on and fully operative.

— Fast flashing indicates an unanswered call.

— Lights steadily to indicate unit is locked and will not place calls.

In Use — Flashes while a call is in process.

No Svc (No Service) — Flashes or lights steadily if the unit is beyond range of a cellular system. While lit, calls cannot be placed or received (see *Service Area*, page 14).

Roam — Flashes if unit is accessing another system for service (see page 14).

④ **Number/Message Display**

⑤ **Numeric Keypad** — Used to enter call information.

⑥ **Control Keypad**

Rcl — Recalls and displays numbers stored in memory.

Clr — Clears last digit. Press and hold to clear entire display.

Snd — Initiates a call to the entered telephone number or answers a call. Press for a switchhook flash when a call is in progress.

Sto — Stores numbers in directory.

Fcn — Used with other keys to access special features.

End — Terminates a call in progress and exits special functions.

Pwr — Controls power to the unit.

Lock — Electronically locks telephone to prevent unauthorized use. During a call, mutes handset.

Vol — Adjusts earpiece and ringer volume.

⑦ **Mouthpiece**

BASIC OPERATION

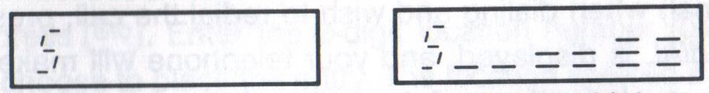
Here, we'll briefly describe the power-up cycle and how to place and receive calls.

Turning Unit On and Off — The Pwr key turns the telephone both on and off. Each time it is turned on, your unit performs a series of self-tests, sounding a tone and lighting all display characters and status indicators to check their operation.

If one or more special features have been selected, the character "o" will appear in the display. If the message *Loc'd* appears, the unit is locked and cannot place or receive calls until unlocked (see *Electronic Lock*, page 10).

Signal Strength Meter (SSM) — The SSM represents the relative signal strength level of the received signal to your phone. The SSM is displayed as a bar graph following the letter S at the left side of your display. The S by itself represents the lowest strength, with each additional bar representing a stronger signal.

S (Signal Strength Meter) appears in the display each time the unit is turned on. When the SSM ends its initial display time, you can display it again by pressing the Clr button. If any of the phone's special features had been previously selected, you will be shown a message on the left side of the display when the phone is turned on and before the SSM is displayed.



LOWEST SSM — HIGHEST SSM

The signal strength meter can be deactivated through the feature menu by selecting "signal off". Press Fcn, 1 and scroll with the * and # keys until you get to _signal _off. Use the Clr button to change the status of the SSM between on (_) and off (o). To exit feature menu press End. When the signal strength meter has been disabled, the word "on" will appear in the display when the phone is turned on.

Any messages, such as *Loc'd, MUtE*, etc., which appear in the display because of this feature's activation, will take priority over the SSM, and you will not see the SSM displayed in these cases. Additionally, when hands free mode has been activated in the Digital Hands Free Adapter kit and the message "HF" appears, the SSM feature will not be displayed.

To best utilize the SSM, you should familiarize yourself with the relative signal strength levels and their associated call placement and call-in-progress qualities.

Placing Calls — To place a call, enter the number you wish to dial and press the [Snd] key. To correct or cancel just the last digit entered, press and release the [Clr] key quickly. In this manner, you may clear each digit in turn, or hold the [Clr] key depressed to erase the entire entry.

Receiving Calls — When you hear the ring tone indicating a call, answer the phone by pressing the red [Snd] key. Power must be on to receive calls.

Ending Calls — To end calls as you would when hanging up your home or office phone, press [End].

Automatic Answer — This feature allows you to receive a call without pressing the [Snd] button. If this feature is selected, you may begin your conversation after the phone rings twice. Refer to *Feature Menu* on page 11 for activating automatic answer.

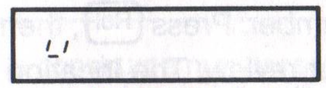
Automatic Redial — Your telephone includes a convenient feature designed to make repetitive call attempts unnecessary when a cellular system is busy (this does not apply when the party you are calling is busy). If you receive an alternating high/low signal (intercept) or the fast busy tone (reorder signal) when dialing and wish to redial the call, press [Snd]. The message *rEdiAL* is displayed, and your telephone will make the call attempt continuously for the next 4 minutes. As a connection is made, the unit will ring once to alert you so that you may lift it to your ear and begin conversation. If 4 minutes is insufficient time, press [Snd] to begin another cycle.

Illuminated Keypad — Your keypad lights whenever the phone is turned on or when a call is received. To help conserve battery power, the display and keypad lighting turns off if no key is pressed.

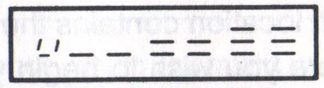
Volume Controls — To suit your individual preference, earpiece and ringer volume are independently adjustable. To raise volume, press and hold the [Vol] button. Release and press again to lower.

- *Earpiece Volume:* Press and hold [Vol] button.
- *Ringer Volume:* Press [Fcn], then [Vol] button.

Volume Meter — The volume meter represents the current volume setting and will appear in the display whenever you adjust the earpiece or the ringer volume. The volume level is displayed as a bar graph following the letter V at the left side of the display. The V by itself represents the lowest volume setting, with each additional bar representing a higher volume setting.



LOWEST VOLUME SETTING



HIGHEST VOLUME SETTING

DIRECTORY MEMORY DIALING

Your telephone provides a numeric memory in which to store frequently called phone numbers. The memory will accept entries designated by location numbers 01, 02, etc. Calls are placed from within the memory by pressing [Snd] when the number is displayed. The telephone accepts up to 16 digits for each memory location. Before setting up your memory, we suggest that you read the rest of this section to become familiar with the ways in which you will access and use it.

Storing Numbers to a Memory Location — Enter the number you wish to save and press [Sto]. Enter the 2-digit location number (01, 02, etc.) in which you choose to place the entry. The location entered is displayed to confirm storage.

If a number is already stored at this location, it will be replaced by the new entry. You must enter the location number within 8 seconds of pressing [Sto] or the operation will cancel.

Changing Entries — Press [Rcl] and the 2-digit location number so that the number to be changed is displayed. Press and release [Clr] quickly,

then repeat slowly, to back out each of the digits displayed. Enter the new number. Press [Sto] and the 2-digit location.

Clearing Entries — Press and hold [Clr]. Then press [Sto]. Enter location number to be cleared.

Recalling From Memory — Press [Rcl] and enter the location number (01, 02, etc.). The display shows the location number, then the last 10 digits of its number. To review the complete number, press [Rcl].

Memory Scrolling — Memory scrolling allows you to review your memory locations sequentially, beginning with the location of your choice. This is useful when searching for a specific number in memory when you are not certain which location contains the number. Press [Rcl], then the memory location where you wish to begin your review. The location number and digits stored will appear in the display. The appearance of an apostrophe (') following the location number confirms that you have enabled memory scrolling. Press [#] to scroll forward through the items and [*] to scroll backward. At any time while scrolling, you may place a call to the displayed number by pressing [Snd].

NOTE *Memory scrolling can be performed during a call. Pressing [End] while scrolling during a call extinguishes the apostrophe (') and cancels scrolling, but does not terminate the call.*

Postscripting — You can add additional digits to the end of recalled numbers by entering them before pressing the [Snd] key. This is particularly useful if you frequently place calls to the same area code and prefix. If you wish, you can store the area code and prefix as a memory entry, then recall it and postscript the 4-digit suffix before pressing [Snd].

Super Speed Dialing — Super speed dialing is the fastest method of placing calls from the memory. To use, enter the location number (without pressing [RCL]) and press [Snd]. The number will *not* appear in the display for review.

NOTE *Do not attempt the sequence [0 OPER], [Snd] This will place a call to the local operator.*

Memory Linking/Pause — Two-part calling, using DTMF signaling, can be automated by a unique feature that permits the programming and di-

rectory storage of pauses between groups of numbers. When recalled and sent, the phone stops transmitting at the pause and waits for your response (that is, secondary dial tone).

- *To Construct a Linked Sequence* — Enter the first group of numbers you wish to send, using the keypad or recalling from memory by using [Rcl]. Insert a pause by pressing [Fcn], [Snd]. An "o" will appear where the pause is inserted. Enter the next group of numbers, using the keypad or recalling from memory by pressing [Fcn], [Rcl], and the memory location. Repeat this sequence for as many groups as needed, up to 24 digits maximum (each pause counts as 1 digit).

Example: To construct a number sequence, which you might use to inquire about your bank balance, follow the example below:

The bank's telephone number: 123-4567
Your ID number: 555
Your account number: 222

NOTE *Pressing [*] or [#] may be required by the bank.*

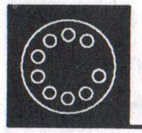
	Display
1. Enter the phone number of bank: 1234567	1234567
Or recall from memory location "XX": [Rcl] "XX"	
2. Press [Fcn], [Snd]. A pause is stored.	1234567o
3. Enter ID number and [#]: 555#.	1234567o555C
Or recall from memory location "XX": [Fcn], [Rcl] "XX".	
4. Press [Fcn], [Snd]. A pause is stored.	1234567o555Co
5. Enter the account number 222:	1234567o555Co222
6. To store number, press [STO] and the 2-digit location number.	

- *To Place a Linked Call* — Press [Snd] to place a call to the phone number entered before the first pause. After waiting for the

required response, send the second group by pressing [Rcl], [Snd]. Repeat the [Rcl], [Snd] sequence until all digits have been sent.

- *To Store a Linked Sequence* — Press [Sto], then enter the location number for desired memory storage. Remember that the phone only accepts 16 digits for each memory location.

NOTE *Long Tone DTMF signals cannot be sent using this procedure. If Long Tone DTMF signals are required, they must be sent manually with Long Tone enabled as described on page 9.*



SPECIAL DIALING MEMORIES

One-Touch Emergency Dialing — Memory location 01 may be used for 911 or any other emergency number you may wish to dial, even if your phone is locked. Press and hold [1] to automatically place a call to the emergency number. [EMERG 911] will appear in the display. Automatic Redial does not work with emergency dialing while the phone is locked. If your phone is locked and your 3-digit unlock code ends with the digit "1", the phone will unlock but will not place a 911 call, even if you press and hold [1] when unlocking your phone. If you are unlocking your telephone and the first or second digit of your 3-digit unlock code is "1", and you press and hold [1], you will place an emergency call.

Emergency Dialing can be deactivated by using the feature menu found on page 11. When this feature is deactivated, the number stored in memory location 01 will still be dialed if the phone is unlocked and if you press and hold [1], but [EMERG 911] will *not* appear in the display.

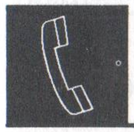
NOTE *If call restriction service level 1 is enabled, which applies to location 01, an emergency call will not be placed, unless* [Rcl], [1], [Snd] *is used to override the restriction.*

Scratch Pad Memory — The scratch pad permits entry of numbers from the keypad during conversation. If your party gives you another number to call, simply enter this from the keypad. If you make an error, press [Clr] to erase the last digit entered or hold [Clr] to erase the entire entry.

Advise your party that they will hear tones as you store the number. To call the scratch pad number after ending the conversation, press [End] and then [Snd].

Last Number Called Memory — Your phone stores the last number you actually used to make a call. To recall this number, enter [Rcl], [0], [0]. To place a call to this number, press [Snd].

NOTE *Do not attempt the sequence* [0], [Snd], *or you will place a call to the local operator.*



CALL FEATURES

These features are designed to simplify operation or provide additional convenience during special situations. We recommend that you experiment with these before using them during calls.

To Display Own Telephone Number — Press [Rcl], [#].

Call in Absence Indicator — If an incoming call is unanswered, the message *CALL* is displayed for 8 seconds. Pressing any key but [Clr] and [End] redisplays the message to inform you of the call attempt. You must press [Clr] or [End] to cancel the message.

Tone Dialing (Two-Part Calling) — Your telephone provides the standard Dual-Tone Multi-Frequency (DTMF) signals typically used to access alternate long distance services, signal pagers, etc. Generally, these services use a two-part procedure: first, a call is placed from the memory or through the keypad to a central telephone number; then a secondary dial tone is heard and the additional tone digits are sent.

Once the initial call is made, you can append additional tone digits using the keypad. The tones are automatically sent as you press the keys. Do not press the [Snd] key.

To tone dial from memory locations, place the initial call. Then, recall from the memory (using [Rcl], location number) the number you wish to send as DTMF digits. Press [Rcl], [Snd]. Repeat above steps as required to send separate groups of numbers.

Long Tone DTMF Signals — Some devices, such as answering machines, require access tones longer than the standard DTMF signals that the phone sends (about 0.1 second in length). With this feature, tones are sent for as long as the key is depressed. To activate this feature, enter the menu by pressing Fcn, 1 and scroll with the * and # keys until you get to:

_ LONG	_ DTMF

Use Clr to turn feature on (o) or off (_) .

CALL TIMERS

Individual Timer — The individual timer accumulates air-time in minutes and seconds for each call. It is automatically reset before each call and when the phone is turned off. To display, press Rcl, #, #.

Resettable Timer — The resettable call timer accumulates the unit's air-time in minutes from the point at which it is reset. You may wish to reset this timer in concert with your monthly billing cycle. To display, press Rcl, #, #, #. To reset, press Fcn, 0, 7, Clr.

Cumulative Timer — This nonresettable timer accumulates the unit's total air-time in minutes, starting with initial factory testing. To display, press Rcl, #, #, #, #.

This timer begins counting as a cellular channel is assigned, or when the phone rings to signal an incoming call. If an incoming call is not answered, the timer reverts to its previous value.

Microphone Muting — This feature allows you to confer privately with others during a conversation. It will disable the microphone and display the *MUtE* message. To mute microphone, press Lock. To reinstate, press Lock again. The mute feature is cancelled when you end your call.

SECURITY FEATURES

Your portable telephone offers several forms of security against unauthorized use. These require either your 3-digit unlock code, or the 6-digit security code assigned when the unit was purchased.

Electronic Lock — The electronic lock prevents use of the telephone by disabling both incoming and outgoing calls. To lock telephone, press and hold Lock or press Fcn, 5 (while not in a call) until the unit displays *Loc'd* and the green lock indicator lights steadily. To unlock telephone, enter 3-digit unlock code. If you make an error, press Clr and start again.

If the unit is not unlocked within 8 seconds, it automatically turns off to prevent use and preserve battery power. If a call is received during this period, the phone will ring and you must enter the unlock code before the call can be answered.

Changing Your 3-Digit Unlock Code — To set a new unlock code, press Fcn, 0; enter your 6-digit security code; enter your desired *new* 3-digit unlock code; and press Sto.

This will display the new unlock code. The telephone will also unlock if locked initially. (Use this procedure if you have forgotten your 3-digit unlock code as well.)

> ***Example:*** If your security code is 654321 and you wish to change your unlock code to 987, you would enter the following button sequence:
>
> Fcn, 0, 6, 5, 4, 3, 2, 1, 9 8, 7, Sto.

Automatic Lock — This feature automatically locks the unit each time it is turned off. To activate this feature, enter the menu by pressing Fcn, 1 and scroll with the * and # keys until you get to:

_ LOCK	_ AUTO

Use Clr to turn feature on (o) or off (_) .

Outgoing Call Restrictions — Your telephone can be set to restrict call placement (as when lending the unit to another person). Using the 6-digit security code, you may select one of the following levels of restriction.

Outgoing Call Restrictions	Service Level
Phone will place calls only from memory locations 1–10. No keypad dialing. If locations 1–10 are cleared, no outgoing calls can be made.	1
No restrictions (standard setting)	4

- *To Enable Call Restriction* — Press Fcn, 0. Enter your 6-digit security code. Press 1. Press Sto. The unit displays *LEvEL 1.*
- *To Change the Unit to Unrestricted Operation* — Press Fcn, 0. Enter your 6-digit security code. Press 4. Press Sto. The unit displays *LEvEL 4.*

FEATURE MENU

This feature menu allows you to easily enable the following special features of your cellular phone. To enter the feature menu, press Fcn, 1. Press # to scroll forward through the items and * to scroll backward. The menu allows you to turn these features on and off by using the Clr key.

"_" indicates the feature is not selected.

"o" indicates the feature is selected.

Press End to exit feature menu.

NOTE *Signal Strength Meter and Emergency Dialing are exceptions to this rule and are enabled when "_" is displayed.*

Feature	Page Ref.
Signal Strength Meter	2
Automatic Answer	3
Automatic Lock	10
Emergency Dialing	7
Long-Tone, Dual-Tone Multifrequency Signals	9
VOX	13

Feature Status Review — When the telephone is turned on, the symbol "o" in the display indicates that one or more features have been selected or

changed from their standard settings. Status Review permits you to scroll through these for your reference. To review status, press Fcn, 0, 9, Rcl. Press # or * repeatedly to scroll through messages. To end review, press End.

Status Messages — During Status Review, features selected or changed are indicated by the following messages.

Message	Page	Description
AnSwEr	3	Automatic Answer
AUtoLoc	10	Automatic Lock
Emr- OFF	7	Emergency Dialing
HOME	15	System Type Selection
L dtMF	9	Long Tone DTMF
LEvEL 1	11	Call Restrictions (See Service Levels)
SCAn A	15	System Type Selection
SCAn Ab	15	System Type Selection
SCAn b	15	System Type Selection
SCAn bA	15	System Type Selection
SiG oFF	2	Signal Strength Indicator
Std	—	Features set as standard
vOX	13	Voice-Operated Transmission

BATTERY OPERATION

The nickel-cadmium batteries supplied with your telephone must be fully charged before placing the unit into service. The batteries may be stored at room temperature in any state of charge without damage. However, new batteries or those which have been stored for an extended period without use must be charged overnight using either the Overnight Charger or the IntelliCharge™ Rapid Charger, and cycled through five discharges and overnight recharges.

CAUTION

To avoid damage to the batteries, do not place them anywhere that might cause the battery terminals to short together.

Battery Removal/Replacement — The battery pack on the portable telephone can be replaced quickly and easily without using any tools. Simply grasp the unit in one hand, slide the thumb catch on the bottom of the unit, and slide off the battery pack. When you slide on the replacement battery pack, a noticeable click will be heard as the battery pack locks into place.

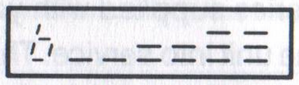
WARNING

BATTERY MAY EXPLODE IF EXPOSED TO FIRE.

VOX Operation — Voice-Operated Transmission (VOX) is a method of conserving battery power by activating the unit's transmitter only while talking. In this manner, your battery's air-time can be greatly extended.

Ask your Cellular System Operator if VOX operation is supported in your service area. If VOX is not supported in your system, VOX selection will have no effect. To activate this feature, enter the menu and select.

Battery Meter — The battery meter represents the current voltage of the battery being used. You can use this to estimate the amount of battery capacity remaining. To review, press Fcn, 4 and release. The meter is displayed as a bar graph following the letter B at the left side of the display. The B by itself represents the lowest voltage, with each additional bar representing a stronger charge. Variables such as temperature, battery age, and charging conditions may affect battery voltage.



HIGHEST VOLTAGE

Low Battery Warning — Low battery power is indicated by a short dual-tone alert repeated periodically, and the displayed message *Lo bAt*. As the battery approaches discharge, the unit will automatically turn itself off.

Battery Charging — Your battery needs no maintenance other than routine charging. The battery should be at or near room temperature when charging. The battery will need to be fully charged before first use.

ROAMING AND SYSTEM OPERATION

There are generally two types of cellular systems serving any metropolitan area. One of these will most likely be operated by the telephone company that provides telephone service to your community, generally referred to as a *wireline carrier*. The other cellular service provider is a "radio common carrier," referred to as a *nonwireline carrier*.

Your Cellular Service Operator will provide information concerning specific features, procedures, and coverage in your particular area.

Service Area — The area within which the portable telephone operates is defined by your cellular service. Since this is a radio system, no exact boundaries (as on a map) can be drawn. The red **No Svc** indicator lights if you are beyond range of a service area. There may be locations within your area, such as tunnels and underground parking facilities, where the unit may act as if it were beyond range.

Switchhook and Enhanced System Services — During a call, pressing Snd performs a switchhook function used to access enhanced Cellular System features such as call waiting and conference calls. Consult your Cellular Service Provider for the functioning of these features with the Snd key.

Roaming — The term "Roaming" applies to the use of cellular telephones within systems other than those designated as their "Home" system. The **Roam** indicator lights whenever the unit comes within range of a visited system. As your phone begins to roam, it seeks service according to the conditions you have selected (see below).

Slow flashing of the **Roam** indicator signals that your phone unit is accessing a home type system, while rapid flashing indicates the unit is attempting connection through a non-home type system.

NOTES *Contact your system operator, or that of the visited system, for information on dialing and billing procedures. To use alternate long distance services when roaming, be certain to dial the appropriate area code and local number to access the alternate carrier in the visited area. Then use the tone dialing sequence described on page 8.*

System Type Selection (Selectable System Registration) — Your telephone seeks cellular service according to the mode you have selected (see following table).

Mode	Displayed As
Standard Unit first seeks a home type system, then a non-home type. If home system is *nonwireline* (type A) If home system is *wireline* (type B)	 *Std A B* *Std B A*
Invert Preference Unit first seeks a non-home type system. **Roam** indicator acts as in standard mode (it does not invert). If home system is *nonwireline* (type A) If home system is *wireline* (type B)	 *Scan B A* *Scan A B*
Home Only Unit will not operate outside its home system.	*Home*
Scan A Unit will operate only within *nonwireline* (A) systems.	*Scan A*
Scan B Unit will operate only within *wireline* (B) systems.	*Scan B*

Changing System Type — To change the system type, press: Rcl, ✱. Repeatedly press ✱ until the desired system type appears in the display. To activate the selection, press Sto. To return to normal operation, press End. To exit without changing selections, press End. You may confirm your selection with the Status Review feature or by re-entering the sequence above.

NOTE *A constantly flashing* **Roam** *indicator, or a steadily lit* **No Svc** *indicator while within your home service area, may indicate an unintentional choice has been made. If this occurs, re-enter System Type Selection to see if the unit is operating in Standard Mode, or if an alternate selection was made.*

NAM

TWO-SYSTEM REGISTRATION

Your cellular telephone is equipped with a feature that allows you to maintain two telephone numbers from two different system operators. Both are designated as your home system, but are accessed separately. At the time your phone was programmed, you elected whether to enable this feature and which two systems would be treated as your home systems.

Your phone can only be active in one of the two home systems at any time. Calls can be placed and received using the active system only. To display the active number, press Rcl, #. To operate this number, press Clr. To select the other phone number, press Rcl, #, Sto. The original phone number will disappear from the display, and the new number will appear.

Each time your telephone is turned on, a message will appear in the display, indicating which home system type and phone number is currently active. Possible messages are:

A1 Your active home system is a nonwireline system with phone number 1.
A2 Your active home system is a nonwireline system with phone number 2.
B1 Your active home system is a wireline system with phone number 1.
B2 Your active home system is a wireline system with phone number 2.

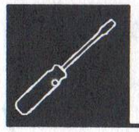
If a call is placed to the inactive phone number, the caller will receive the recorded Not in Service message.

When you turn on your unit with either the ignition switch or the power button, the telephone will remember which system was active when you turned the unit off. That system will stay active until you change to the other system with the sequence Rcl, #, Sto. You cannot switch systems during a call. If you enter the sequence during a call, the unit will wait until the call is terminated and the **In Use** indicator is extinguished before switching systems.

Each system (and phone number) has its own Selectable System Registration state that you may program (see page 15). That is, you can select Home Only for System 1 (and phone number 1) and Standard mode for System 2 (and phone number 2). Whenever you switch back to System 1, your telephone will operate in Home Only mode again.

The **Roam** indicator will operate based on the active system. For example, if your active system is **A1** and you are roaming on a wireline (B) system, the **Roam** indicator will flash.

Each system (and phone number) has its own cumulative and resettable call timers. You can only display the call timers of the active system (and phone number).



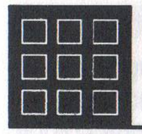
CARE AND MAINTENANCE

Antenna Replacement — The antenna fits into a screw-in base and may be removed when appropriate (for example, when storing in your briefcase). Before removing the antenna, you *must* turn off the portable telephone to prevent radio transmission. Grasp the antenna near its base and turn counterclockwise. When reinstalling the antenna, twist clockwise *by hand* until snug. **Do not force!**

Cleaning — Clean the unit only with a damp cloth moistened with a mild detergent and water. Do not use abrasive cleaners or any type of solvent which may affect the unit's finish.

Before Calling for Service —

- *Is the unit locked?* (See *Electronic Lock*, page 10.)
- *Is the* **No Svc** *indicator lit?* (See pages 1, 14, and 15.)
- *Have you programmed a unique operating mode?* Constant flashing of the **Roam** indicator while in your home service area may indicate that an incompatible system type has been selected. (See *System Type Selection*, page 15.)
- *Is the unit operating with nonstandard settings?* If, when you first turn the unit on, the symbol "o" is displayed, you may have inadvertently selected improper operating characteristics. (See *Status Review*, page 11.)
- *Have you charged the battery?* Place the unit in the charger and verify that the charger indicator lights. If it does not light, check all wire connections and remove and reseat the battery.



OPTIONAL ACCESSORIES

Be sure to use genuine Motorola batteries and accessories. Use of untested, non-Motorola accessories may void your warranty or present safety hazards.

Overnight Charger — The Overnight Charger has one charging slot that accepts a Motorola portable battery alone, or attached to the phone (with power off). A single yellow light indicates the battery is charging and remains lit until the battery is removed. The Overnight Charger should completely recharge the telephone's battery in 12 hours if the telephone is turned off.

Rapid Charger — The Rapid Charger has two charging slots, left and right, that accept a Motorola portable battery alone or attached to the phone. The charger also features five staging lights indicating the battery's charge status. A solid red or yellow light means rapid charging; blinking means waiting to rapid charge. The battery in the left slot always has priority and will be charged first. The Rapid Charger charges the phone's battery in 1.5 hours, provided the phone is turned off.

When the left battery reaches 90 to 100 percent capacity, the charger switches to rapid charge the right battery to 90 to 100 percent capacity. Both batteries are then trickle-charged simultaneously to 100 percent as indicated by the solid green light.

Travel Battery Saver — Enjoy virtually unlimited use of your portable in an operating vehicle while conserving the telephone battery power. The Travel Battery Saver simply slides onto the portable in place of the battery and allows you to use your vehicle's battery to power your phone.

Travel Charger — The Travel Charger charges the portable battery in 1 to 2 hours while in use in a vehicle. It conveniently connects to the cigarette lighter; or use with the included ac adapter for 8-hour battery recharging in the office, home, or hotel room.

Digital Hands Free Adapter — The Digital Hands Free Adapter (DHFA) is an economical enhancement for improved vehicular operating convenience and full duplex, hands free operation when used with your portable. The DHFA connects to your vehicle's power system, conserving your portable battery power, and provides in-vehicle battery charging, full duplex hands free operation, and the ability to connect to an external antenna.

GENERAL SAFETY INFORMATION

ELECTROMAGNETIC ENERGY SAFETY GUIDELINES — The U.S. Federal Communications Commission (FCC) has adopted an electromagnetic energy safety guideline with respect to human exposure to radio frequency energy. Proper use of this cellular radiotelephone will result in exposure well below the limits adopted by the FCC. The following precautions are strongly recommended.

Personal or Portable Telephone —

DO NOT hold the cellular telephone such that the antenna is in contact with exposed parts of the body, especially the face or eyes, while the unit is turned on.

The cellular personal or portable telephone will perform best if it is held in the same manner as you would hold the handset of a landline (home or office) telephone. This would be with the antenna angled up and over your shoulder while speaking directly into the microphone.

DO NOT operate the cellular telephone in an airplane while airborne. While on the ground, obtain permission from the pilot before using your phone.

DO NOT allow children to play with the cellular telephone.

Convertible Telephone (or Personal or Portable Telephone with an externally mounted vehicular antenna):

DO NOT operate the cellular telephone when a bystander is within 1 foot (0.3 meter) of the externally mounted antenna.

DO NOT operate the cellular telephone with its accessories unless all cables and connectors are secure and any open connectors are properly terminated.

Canadians, Please Note: *As of the date of this printing, an equivalent Canadian guideline had not yet been adopted. Pending such adoption, however, we recommend that Canadians follow the precautions set forth above.*

Blasting Areas — DO NOT operate this equipment near electrical blasting caps or in an explosive atmosphere. Under certain conditions, cellular radiotelephones can interfere with blasting operations. When you are in the vicinity of construction work, look for and observe signs cautioning against mobile radio transmission. If mobile radio transmission is prohibited, you ***must not place any calls*** until out of the area. Furthermore, you ***must turn off*** your cellular radiotelephone to prevent **any** transmission. *In standby mode, the cellular phone will automatically transmit to acknowledge an incoming call unless the unit is turned off.*

Grounding — For safe operation, all equipment must be properly grounded according to installation instructions.

Service — All equipment should be serviced only by a qualified technician.

Cellular Telephone Use and Driving — For safety reasons, the *driver* should use extreme caution when operating the cellular telephone while the vehicle is in motion.

Safety Information for Radios Installed in Vehicles Powered by Liquefied Petroleum (LP) Gas

WARNING

IT IS MANDATORY THAT RADIO INSTALLATIONS FUELED BY LIQUIFIED PETROLEUM GAS CONFORM TO THE FOLLOWING STANDARD.

National Fire Protection standard NFPA 58 applies to radio installations in vehicles fueled by liquefied petroleum (LP) gas with the LP–gas container in the trunk or other sealed-off space within the interior of the vehicle. This standard requires that:

1. Any space containing the radio equipment shall be isolated by a seal from the space in which the LP–gas container and its fittings are located.
2. Remote (outside) filling connections shall be used.
3. Venting of the container space to the outside shall be provided.

For a complete text of this standard, contact:

National Fire Protection Association
Batterymarch Park
Quincy, MA 02269
Attention: Publication Sales Division

RULES, REGULATIONS, AND PRECAUTIONS

The U.S. Federal Communications Commission and the Canadian Department of Communications regulate cellular radiotelephone service in their respective countries. It is important for you, the cellular radiotelephone user, to observe the applicable regulations when operating your cellular phone in either country. In addition to these U.S. and Canadian federal regulations, you may also be bound by certain state, provincial, territorial, and local rules and regulations, as well as by your cellular carrier's *tariff* (the rates, terms, and conditions of its service). If you wish to use your cellular radiotelephone in both the U.S. and Canada, please consult with your system operator.

Furthermore, you should remember that your cellular phone is a *radiotelephone*—that is, it combines *both* wireline technology, as used in your home or office telephone system, *and* radio technology—and that the scope of regulations and precautions is therefore broader than the scope of regulations and precautions relating to wireline-only telephone usage.

Some of the major points of consideration are set out below. Please note, however, that this "Rules, Regulations, and Precautions" section does not constitute legal advice; and is intended merely for general information purposes. If you have any specific questions, please contact your Cellular Carrier (System Operator).

License — If your home system is in the U.S., you do not require a separate license to operate your cellular radiotelephone; obtaining a cellular telephone access number is sufficient to register you as a user. If your home system is in Canada, a separate license is required; your carrier will assist you in the licensing process. If you wish to use your cellular phone on both sides of the border, please contact your Cellular Carrier (System Operator).

Denial of Service — A cellular carrier may deny service temporarily or terminate service for violation of any governmental regulations or of its tariff.

Driving — Some jurisdictions prohibit your using a cellular telephone while driving a vehicle. Even if your jurisdiction does not have such a law, we strongly suggest that, for safety reasons, the ***driver*** use extreme caution when operating the cellular telephone while the vehicle is in motion.

Consumer Responsibilities — Remember that wireline and radio regulations, with respect to harassing calls, false distress calls, obscene language, etc., apply to cellular phone usage.

Privacy — As a telephone user, you have come to assume a certain standard of privacy when you place or receive a telephone call via the traditional wireline systems. However, because cellular radiotelephones utilize radio transmissions to effect calls, the same standard cannot always be assured. While it is unlawful for any unauthorized person to divulge or use any information obtained from intercepting or "listening in on" conversations intended for others, you should not assume that your conversation is completely secure. Commercially available scanning equipment can permit a third party to monitor the radio channels used for cellular telephone calls.

Interference — No person shall interfere with or cause interference to any radio communication or signal.

Equipment Modifications — Both the U.S. Federal Communications Commission and the Canadian Department of Communications have type-approved the model of cellular radiotelephone that you have purchased, and both have allocated a specific frequency range for cellular service. No changes or adjustments are to be made to your cellular telephone.

MESSAGE GLOSSARY

o	Nonstandard features have been selected
A	(*) key displayed as "A"
AnSWEr AUtO	Automatic Answer feature
AnSWEr	Automatic Answer selected
LOC AUtO	Automatic Lock feature
AUtoLoC	Automatic Lock selected
b ▁▁▁▁▔▔	Battery Meter
C	Precedes Cumulative Timer display (also used to display (#) key)
CALL	Shows incoming call (also used to indicate call in absence)
EMr-SCY	Emergency Dialing
EMr-CY OFF	Emergency Dialing feature
EMr OFF	Emergency Dialing deactivated
HOME	System Type Selection — Home Mode
LEvEL 1	Call Restriction selected
LOnG dtMF	Long-Tone DTMF feature
L dtMF	Long-Tone DTMF selected
Lo bAt	Low Battery
Loc'd	Unit is locked
MUtE	Microphone muted
on	Telephone is on
r	Precedes Resettable Call Timer Display
rEdiAL	Automatic Redial
S▁▁▁▔▔	Signal Strength Meter
SiG oFF	Signal Strength Meter deactivated
SiGnAL OFF	Signal Strength Meter feature
SCAn A	System Type Selection (scan nonwireline "A" only)
SCAn Ab	System Type Selection (scan "A" type first, then "B")
SCAn b	System Type Selection (scan wireline "B" only)
SCAn bA	System Type Selection (scan "B" type first, then "A")
Std	All user features set to standard
Std Ab	System Type Selection (nonwireline standard mode)
Std bA	System Type Selection (wireline standard mode)
v▁▁▁▔▔	Volume Meter
voX	Voice-Operated Transmission (VOX) selected
voX MOdE	VOX Mode feature

TECHNICAL SPECIFICATIONS

Frequency Range	824.04 to 848.97 MHz transmitter 869.04 to 893.97 MHz receiver
Number of Channels	832
Frequency Stability	±2.5 ppm
RF Power Output	0.6 Watt nominal
Input/Output Impedance	50 ohms nominal
Spurious and Harmonic Emissions	Complies with Title 47, Part 22 of the Code of Federal Regulations
Audio Distortion	Less than 5% @ 1 kHz, ±8 kHz
Hum and Noise (C-MSG)	32 dB below ±8 kHz deviation @ 1 kHz
Modulation	F3: ±12 kHz for 100% @ 1 kHz
Audio Response	6 dB per octave pre-emphasis

ENVIRONMENTAL SPECIFICATIONS

Temperature	Operational: −30˚C to +60˚C (−22˚F to +140˚F)
Shock	Exceeds EIA Standards RS152B (Section 15) and IS-19
Drop	Exceeds EIA Standard RS316B
Humidity	90% to 95% relative humidity: meets EIA Standard IS-19
Vibration	Exceeds EIA Standards RS316B and IS-19
Rain	Rain test of 5 minutes on each surface
Dust	140 mesh blown silica flour test, tested for 5 hours
Salt Fog	Salt solution fog at 35˚C (9˚F), tested for 48 hours

MEMORY LOCATION DIRECTORY

Memory Location	Phone Number	Name
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
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QUICK REFERENCE CARD

Turn On	Pwr
Unlock	Three-digit unlock code. If you make an error, Clr and enter again.
Place Call	Enter number, Snd
Super Speed Dialing	Directory location number, Snd
Receive Call	Snd
End Call	End
Store Number	Phone number, Sto, 2-digit location number
Recall Number	Rcl, 2-digit location number
Review Entire Entry	Rcl
Call Number Displayed	Snd
Lock Unit	Lock
Review Battery Meter	Press Fcn, 4 and release.
Adjust Volume	*Earpiece* — Press and hold Vol to increase. Release, press again to decrease. *Ringer* — Fcn, then Vol as above.
Recall Last Number Used	Rcl, 0, 0
Recall Own Phone Number	Rcl, #
Individual Call Timer	Rcl, #, #
Cumulative Call Timer	Rcl, #, #, #
Access Features	Press Fcn, 1.
Review/Scroll Menu Features	Press * or #.
Status Review	FCN, 0, 9, Rcl, # or * scrolls messages.

MOTOROLA

Cellular Subscriber Group

600 North Highway 45
Libertyville, Illinois 60048

For information about your product, or accessories for your product, please call Motorola's Cellular Customer Response Center: in U. S., 1-800-331-6456; in Canada, 1-800-461-4575. For information about your cellular service, please call your service provider (carrier).

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